Technical Specifications

ENCODING/DECODING EQUIPMENT

AUDIO OVER IP

SOCIETATEA NAȚIONALĂ DIRECTOR EXECUTIV TEHNIC RADIOCOMUNICAȚII S.A. 2

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1. GENERAL SPECIFICATIONS :

1.1. Objectives:

The project aims at achieving the redundancy of radio modulation transport using the IP / MPLS network as an alternative to the current RR SDH solution.

1.2. Requested equipment

In order to achieve the audio transport solution over the IP/MPLS S.N. Radiocommunications S.A. will acquire a pair of Encoder/Decoder Audio over IP equipment.

The Encoder will receive a stereo analog audio signal from Studio. The signal will be coded and transported by the IP / MPLS network of SN Radiocomunicatii SA to the location of the Decoder. For transport, two distinct IP connections will be used, using either two Ethernet ports or a single Ethernet port with virtual interface and vlan tagging, and the Encoder will send the audio signal received from the studio on each of the two routes in order to provide redundancy at the transport layer.

The Decoder will receive both streams from the Encoder, transported by the IP / MPLS network. Both encoded signals will be received on each of the two transport routes in order to achieve redundancy at the transport level. The Decoder will rebuild the initial audio signals in order to be forwarded to the transmitter. The decoder will provide the possibility to select the format in which the signal will be recovered (analogue stereo or mono), depending on the input requirements of the transmitter. If one of the transport paths is interrupted, the Decoder must be able to provide the audio signal to the transmitter without interruption, using the transport path that remains functional.

1.3 General technical specifications

1.3.1 The equipment used in the offer must be new and in production at the date of the bidding.

1.3.2 The Offerer must provide a technical solution in conformity with the requests from the Task Book.

1.3.3 The Offerer must provide a statement of EoL (End of Life) and EoS (End of Support) for all hardware and software. EoL and EoS terms shouldn't be sooner then 01.01.2021.

1.3.4 The Offerer will provide the technical documentation with configuration details for the software version installed on the equipment.

1.3.5 Provided Technical documentation should be the official technical documentation of the manufacturer.

1.3.6 Technical documentation of equipment will include:

1.3.6.1 Install manual

1.3.6.2 Maitenance manual

1.3.6.3 Operating and administration manual

1.3.7 The assertions regarding the conformity of the technical characteristics of the offered products with the requests must be proved / demonstrated by "references" to the technical documentation submitted, and the "references" in the technical documentation will have clearly defined the identification coordinates: page / chapter. / Art. / par. / .... and where compliance with a specific request is claimed but can not be proved by reference to the technical documentation submitted, documents from the manufacturer certifying the declaration of conformity

1.3.8 The offeror must provide a statement from the equipment manufacturer (in the attention of SN Radiocommunicatii SA dated to the month and the year in which the tender is submitted) that it is authorized to provide delivery and technical support for all levels, for equipment offered in technical solutions

1.3.9 Minimal warranty period will be 24 months. During the warranty period the equipment provider will replace the faulty equipment or component without any charge for SN Radiocomunicatii SA.

1.3.10 THE OFFER The Producer of the offered equipment must have at least one "Help Desk" of its own, where the SNR will be granted the following facilities:

a) Opening of trouble tickets directly to the equipment manufacturer for any hardware or software issues of the offered configuration / equipment;

b) Operating System Updates (any operating system software component) at no additional cost to those included in the offer during the offered warranty period;

c) Remote via e-mail technical assistance to software and hardware configuration without additional costs to those included in the offer during the offered warranty period.

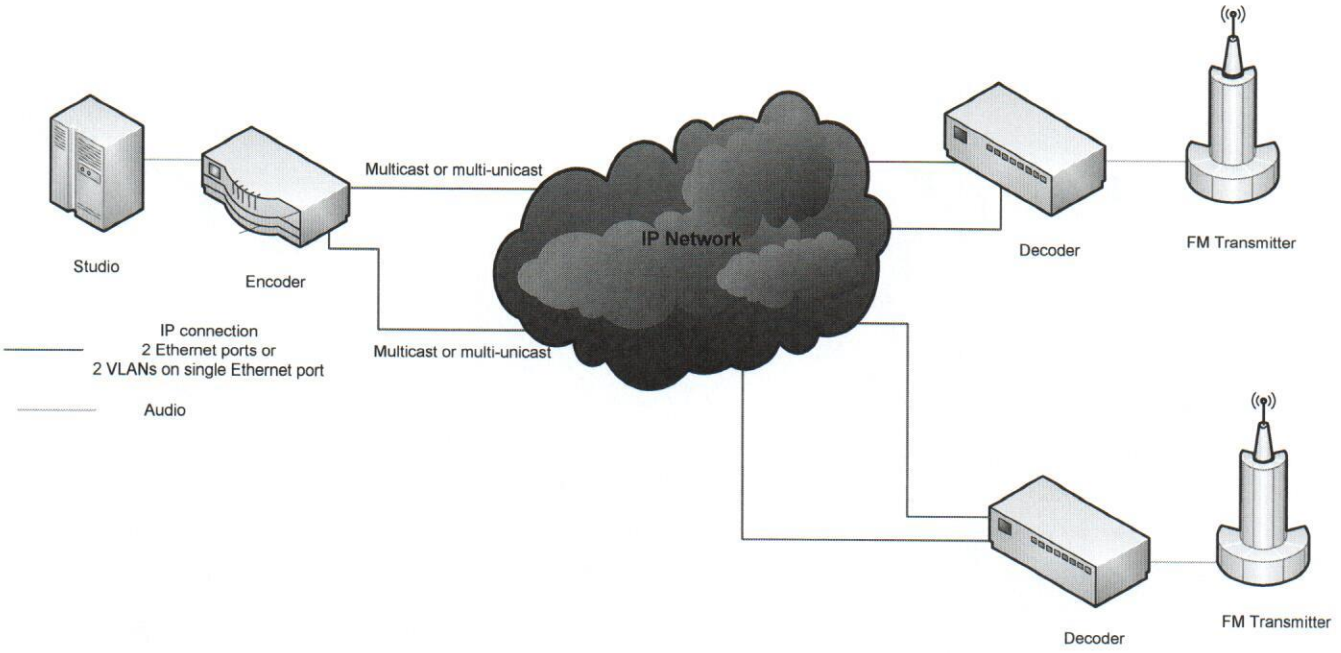
1.3.6 Post-warranty services. The bidder will specify the maximum period during which he can offer post-warranty services for the offered equipment.

1.3.7 The delivery term for the equipment is 30 days from the date of signing the contract.

1.4 Solution description

1.4.1 The requested equipment has the purpose and must perform the encoding and decoding function of an audio signal and its transport over the IP network.

1.4.2 Operating diagram



2. TECHNICAL SPECIFICATIONS

2.1 Encoder

2.1.1 The equipment must perform encoding of the audio stereo signal, encapsulation into ethernet frames and forwarding the ethernet frames over IP network to the decoder.

2.2.2 The equipment will have the following features and functions:

- Enhanced apt-X 16/24, Linear PCM 16/24
- forwarding the encoded signal over two different ways, using either two different ethernet ports or one ethernet port with virtual interfaces and different VLANs.
- unicast, multicast/multi-unicast
- XLR connectors
- guaranteed working temperature minimal range: +10 degrees C to +45 degrees C
- relative humidity at least 90%
- SNMP

2.2 Decoder

2.2.1 The equipment must decapsulate the ethernet frames, decoding and restoring analog audio signal and forwarding it to the transmiter.
2.2.2 The equipment will have the following features and functions:
- Enhanced apt-X 16/24, Linear PCM 16/24
- receiving the encoded signal from two different IP connectiions, using either two different ethernet ports or one ethernet port with virtual interfaces and different VLANs
- equipment is able to delay the audio forwarding (buffer)
- buffer size should be enough for at least 5 seconds of delay
- the equipment's software should allow the user to configure the delay in order to synchronise two different transport technologies
- unicast, multicast/multi-unicast
- XLR connectors
- hitless/seamless protection; the audio signal should not be affected by the delay of the streams
- equipped with two redundant power supplies DC 48V
- guaranteed working temperature minimal range: +10 degrees C to +45 degrees C
- relative humidity at least 90%
- SNMP

3. PRICE OFFER

3.1 The price offer will be presented as price / equipment. If necessary, all costs related to components or additional licenses needed for the equipment offered to meet the technical requirements of point 2 shall be specified.

3.1.1 12 Encoders

3.1.2 33 Decoders

3.2 The offer will include spare parts for the following functions:

3.2.1 1 Encoders

3.2.2 1 Decoders

4. EVALUATION

4.1. Technical evaluation:

4.1.1 Check the compliance of the offer with the requirements of the specifications. Valid technical offers will go to the financial evaluation.

4.2. Financial evaluation:

4.2.1 A ranking will be made on the basis of valid technical offers, the offer with the lowest price will be declared winner.